

X-533-63-1*

SPACE OPERATIONS CONTROL CENTER SATELLITE SITUATION REPORT

VOL. 4, NO. 16

OTS PRICE

XEROX

MICROFILM

AUGUST 31, 1964

\$ 1.00
\$ 1.50



GODDARD SPACE FLIGHT CENTER

GREENBELT, MD.

N64-33046

(ACCESSION NUMBER)

14
(PAGES)

NASA TMX 54-283
(NASA CR OR TMX OR AD NUMBER)

(THRU)

(CODE)

(CATEGORY)

SPACE OPERATIONS CONTROL CENTER
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 4 NO. 16

AUGUST 31, 1964

SATELLITE SITUATION REPORT

THE FOLLOWING REPORT REFLECTS DATA COMPUTED AND COMPILED BY
THE GODDARD SPACE FLIGHT CENTER, NORAD, AND SMITHSONIAN ASTROPHYSICAL
OBSERVATORY AS OF 1200Z ON AUGUST 31, 1964.

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1958 LAUNCHES									
ALPHA 1	EXPLORER 1	004	US	1 FEB	104.5	33.19	1600	342	
BETA 1	ROCKET BODY	016	US	17 MAR	138.4	34.25	4316	653	
BETA 2	VANGUARD 1	005	US	17 MAR	134.0	34.25	3938	650	108.012 &
1959 LAUNCHES									
ALPHA 1	VANGUARD 2	011	US	17 FEB	125.4	32.89	3284	557	
ALPHA 2	ROCKET BODY	012	US	17 FEB	129.7	32.87	3660	553	
ETA 1	VANGUARD 3	020	US	18 SEP	129.8	33.34	3723	506	
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT				
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT				
IOTA 1	EXPLORER 7	022	US	13 OCT	101.1	50.32	1062	564	
IOTA 2	ROCKET BODY	023	US	13 OCT	100.9	50.32	1051	552	
1960 LAUNCHES									
ALPHA 1	PIONEER 5	027	US	11 MAR	HELIOCENTRIC ORBIT				
BETA 1	ROCKET BODY	028	US	1 APR	99.1	48.40	737	694	
BETA 2	TIROS 1	029	US	1 APR	99.2	49.38	742	697	
BETA 3	NONE	101	US	1 APR	97.9	48.50	696	617	
BETA 4	NONE	115	US	1 APR	99.9	48.16	799	706	
GAMMA 2	TRANSIT 1B	031	US	13 APR	93.9	51.24	580	351	
GAMMA 4	NONE	099	US	13 APR	96.7	51.25	726	479	
EPSILON 3	NONE	036	USSR	15 MAY	91.1	64.98	388	265	
ZETA 1	MIDAS 2	043	US	24 MAY	94.3	33.03	496	471	
ETA 1	TRANSIT 2A	045	US	22 JUN	101.6	66.72	1062	610	
ETA 2	GREB	046	US	22 JUN	101.6	66.72	1058	611	
ETA 3	ROCKET BODY	047	US	22 JUN	101.4	66.70	1342	608	
ETA 4		840	US	22 JUN	101.5	66.69	1049	615	
ETA 5		841	US	22 JUN	101.5	66.69	1055	607	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1960 LAUNCHES (CONT'D)									
IOTA 1	ECHO 1	049	US	12 AUG	114.1	47.28	1880	950	
IOTA 2	ROCKET BODY	050	US	12 AUG	118.1	47.23	1686	1501	
IOTA 3	METAL OBJECT	051	US	12 AUG	118.2	47.24	1679	1524	
IOTA 4	METAL OBJECT	052	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED				
IOTA 5	METAL OBJECT	053	US	12 AUG	118.4	47.30	1696	1524	
NU 1	COURIER 1B	058	US	4 OCT	107.0	28.28	1209	966	
NU 2	ROCKET BODY	059	US	4 OCT	106.6	28.21	1204	927	
XI 1	EXPLORER 8	060	US	3 NOV	112.3	49.97	2246	420	
XI 2	ROCKET BODY	062	US	3 NOV	111.9	49.97	2208	418	
XI 3	NONE	069	US	3 NOV	109.2	49.41	1982	399	
XI 4	NONE	105	US	3 NOV	110.5	50.51	2083	418	
PI 1	TIROS 2	063	US	23 NOV	98.2	48.52	735	613	
PI 2	ROCKET BODY	064	US	23 NOV	98.1	48.52	716	619	
PI 3	NONE	074	US	23 NOV	98.2	48.50	720	621	
PI 4	NONE	075	US	23 NOV	98.3	48.50	730	623	
1961 LAUNCHES									
ALPHA 1	SAMOS 2	070	US	31 JAN	94.7	97.41	540	472	
ALPHA 2	METAL OBJECT	079	US	31 JAN	94.6	97.41	540	464	
GAMMA 1	VENUS PROBE	080	USSR	12 FEB	HELIOCENTRIC ORBIT				
DELTA 2	ROCKET BODY	082	US	16 FEB	118.5	38.85	2593	635	
DELTA 3	NONE	085	US	16 FEB	CURRENT ELEMENTS NOT MAINTAINED				
KAPPA 1	EXPLORER 10	098	US	25 MAR	POSITION UNCERTAIN				
NU 1	EXPLORER 11	107	US	27 APR	108.0	28.76	1777	484	
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.8	66.84	1002	878	150;400
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.8	66.83	1001	879	
OMICRON 3-206**	METAL OBJECTS		US	29 JUN					
RHO 1	TIROS 3	162	US	12 JUL	100.4	47.90	823	732	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI- NATION	APOGEE		PERIGEE		TRANSMITTING FREQ. (MC/S)	
							Km.		Km.			
1961 LAUNCHES (CONT'D)												
RHO 2	ROCKET BODY	165	US	12 JUL	100.3	47.90	813		735			
RHO 3	METAL OBJECT	166	US	12 JUL	98.8	47.94	796		610			
RHO 4	METAL OBJECT	167	US	12 JUL	102.0	47.85	930		776			
SIGMA 1	MIDAS 3	163	US	12 JUL	161.5	91.25	3549		3342			
SIGMA 3	METAL OBJECT	188	US	12 JUL	161.6	91.42	3568		3337			
SIGMA 4	METAL OBJECT	196	US	12 JUL	161.9	91.21	3579		3345			
UPSILON 1	EXPLORER 12	170	US	16 AUG	CURRENT ELEMENTS NOT MAINTAINED							
A DELTA 1	MIDAS 4	192	US	21 OCT	166.0	95.91	3740		3513			
A DELTA 3	METAL OBJECT	194	US	21 OCT	165.6	95.83	3722		3500			
A DELTA 4	METAL OBJECT	195	US	21 OCT	166.4	95.85	3780		3507			
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.43	1106		952			
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.41	1107		954			
A ETA 3	ROCKET BODY	204	US	15 NOV	105.6	32.43	1102		944			
1962 LAUNCHES												
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT							
ALPHA 2	ROCKET BODY	222	US	26 JAN	HELIOCENTRIC ORBIT							
BETA 1	TIROS 4	226	US	8 FEB	100.4	48.32	845		706			
BETA 2	ROCKET BODY	227	US	8 FEB	101.4	48.14	944		701			
BETA 3	METAL OBJECT	228	US	8 FEB	99.5	48.42	766		700			
BETA 4	METAL OBJECT	229	US	8 FEB	100.3	48.30	838		707			
ZETA 1	ORB. SOL. OBS. 1	255	US	7 MAR	96.0	32.83	585		550			
ZETA 2	ROCKET BODY	257	US	7 MAR	96.0	32.83	570		563			
KAPPA 1		271	US	9 APR	153.0	86.68	3410		2787			
KAPPA 3		273	US	9 APR	152.6	86.67	3363		2803			
KAPPA 4		274	US	9 APR	153.3	86.67	3424		2802			
MU 2	ROCKET BODY	282	US	23 APR	HELIOCENTRIC ORBIT							
OMICRON 1	ARIEL 1	285	US/UK	26 APR	100.5	53.87	1183		385		136.406	
OMICRON 2	ROCKET BODY	288	US/UK	26 APR	100.4	53.85	1173		385			

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1962 LAUNCHES (CONT'D)									
A ALPHA 1	TIROS 5	309	US	19 JUN	100.5	58.11	969	593	
A ALPHA 2	ROCKET BODY	311	US	19 JUN	100.4	58.10	956	597	
A ALPHA 3	METAL OBJECT	312	US	19 JUN	101.7	58.22	1080	603	
A ALPHA 4	METAL OBJECT	313	US	19 JUN	99.1	58.00	857	575	
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.80	5645	943	
A EPSILON 2	ROCKET BODY	341	US	10 JUL	157.6	44.79	5635	939	
A OMICRON 1		369	US	23 AUG	99.5	98.68	854	621	
A OMICRON 2		370	US	23 AUG	98.2	98.65	753	599	
A OMICRON 3		378	US	23 AUG	100.8	98.71	973	622	
A OMICRON 4		388	US	23 AUG	99.5	98.69	854	619	
A RHO 1	MARINER	374	US	27 AUG	HELIOCENTRIC ORBIT				
A RHO 2	ROCKET BODY	375	US	27 AUG	HELIOCENTRIC ORBIT				
A UPSILON 1		385	US	1 SEP	90.6	82.81	345	260	
A PSI 1	TIROS 6	397	US	18 SEP	98.7	58.32	703	694	
A PSI 2	ROCKET BODY	398	US	18 SEP	98.7	58.31	702	688	
A PSI 3	METAL OBJECT	399	US	18 SEP	99.4	58.44	771	687	
A PSI 4	METAL OBJECT	400	US	18 SEP	98.0	58.20	694	635	
B ALPHA 1	ALOUETTE	424	CANADA	29 SEP	105.5	80.47	1037	999	\$136.591
B ALPHA 2	ROCKET BODY	426	US	29 SEP	105.4	80.47	1028	1002	\$136.077
B ALPHA 3	METAL OBJECT	510	US	29 SEP	105.4	80.51	1027	998	
B ALPHA 4	METAL OBJECT	511	US	29 SEP	105.5	80.44	1046	990	
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B GAMMA 2#	ROCKET BODY	NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT				
B ETA 2	ROCKET BODY	440	US	18 OCT	HELIOCENTRIC ORBIT				
B KAPPA 1		444	US	27 OCT	132.7	71.28	4264	210	
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	312.3	18.04	17427	307	

OBJECTS IN ORBIT			CATALOGUE			PERIGEE TRANSMITTING			
OBJECT	CODE NAME	NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	FREQ. (MC/S)
1962 LAUNCHES (CONT'D)									
B LAMBDA 2#	ROCKET BODY	NNA	US	27 OCT	INSUFFICIENT OBSERVATIONS				
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.16	1178	1081	162;324
B MU 2	ROCKET BODY	447	US	31 OCT	107.6	50.16	1168	1065	
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT				
B TAU 1		502	US	13 DEC	109.7	70.35	2197	228	
B TAU 2	INJUN 3	504	US	13 DEC	112.7	70.35	2464	236	
B TAU 4		508	US	13 DEC	106.1	70.32	1870	223	
B TAU 5		513	US	13 DEC	109.6	70.30	2179	234	
B TAU 6		520	US	13 DEC	112.1	70.38	2400	240	
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.50	7440	1318	\$136.140 136.620
B UPSILON 2	ROCKET BODY	515	US	13 DEC	184.9	47.52	7430	1311	
B CHI 1	EXPLORER 16	506	US	16 DEC	104.4	52.01	1202	727	
B PSI 1	TRANSIT 5A	509	US	19 DEC	99.1	90.64	736	696	
B PSI 2		514	US	19 DEC	97.7	90.74	733	568	
B PSI 3		519	US	19 DEC	99.1	90.63	739	692	
B PSI 4		523	US	19 DEC	100.2	90.48	839	700	
1963 LAUNCHES									
1963 03A		527	US	16 JAN	94.5	81.89	526	463	
1963 04A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 04B	ROCKET BODY	532	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 05A		533	US	19 FEB	97.7	100.48	801	498	
1963 05B		534	US	19 FEB	97.7	100.48	797	502	
1963 05C		535	US	19 FEB	96.9	100.48	753	470	
1963 05D		536	US	19 FEB	98.3	100.50	834	528	
1963 08B		566	USSR	2 APR	BARYCENTRIC ORBIT				
1963 09A	EXPLORER 17	564	US	3 APR	94.9	57.60	770	257	
1963 13A	TELSTAR 2	573	US	7 MAY	225.3	42.76	10813	959	136.050

<u>OBJECTS IN ORBIT</u>				<u>OBJECTS IN ORBIT</u>			<u>OBJECTS IN ORBIT</u>		
<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLINATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1963 LAUNCHED (CONT'D)									
1963 13B	ROCKET BODY	575	US	7 MAY	225.1	42.77	10790	965	
1963 14A		574	US	9 MAY	166.4	87.31	3731	3560	
1963 14B		579	US	9 MAY	166.4	87.26	3801	3492	
1963 14C		608	US	9 MAY	166.4	87.37	3649	3642	
1963 14D		589	US	9 MAY	CURRENT ELEMENTS NOT MAINTAINED				
1963 14E		602	US	9 MAY	166.1	87.39	3637	3625	
1963 14F		628	US	9 MAY	166.8	87.36	3701	3621	
1963 14G		629	US	9 MAY	166.4	87.35	3658	3632	
1963 14H		702	US	9 MAY	166.4	87.34	3652	3639	
1963 17A		580	USSR	22 MAY	92.6	48.95	553	247	
1963 17C		582	USSR	22 MAY	93.9	49.19	602	325	150;400
1963 22A		594	US	16 JUN	99.7	90.01	764	727	
1963 22B		603	US	16 JUN	99.7	90.01	766	725	
1963 22C		610	US	16 JUN	101.2	90.20	885	750	
1963 22D		611	US	16 JUN	98.1	89.82	775	568	
1963 24A	TIROS 7	604	US	19 JUN	97.4	58.24	645	627	136.234 136.923
1963 24B	ROCKET BODY	605	US	19 JUN	97.4	58.23	646	618	
1963 24C	METAL OBJECT	606	US	19 JUN	97.9	58.39	672	643	
1963 24D	METAL OBJECT	607	US	19 JUN	96.9	58.09	640	580	
1963 25B		614	US	27 JUN	132.3	82.14	4111	339	
1963 26A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	102.1	49.72	1299	413	
1963 27A		613	US	29 JUN	94.7	82.32	526	484	
1963 27B		615	US	29 JUN	92.8	82.30	412	412	
1963 30A		622	US	19 JUL	167.8	88.37	3783	3616	
1963 30B		635	US	19 JUL	167.8	88.34	3795	3610	
1963 30C		630	US	19 JUL	167.5	88.40	3709	3667	
1963 30D		624	US	19 JUL	167.9	88.31	4140	3267	
1963 30E		631	US	19 JUL	168.3	88.47	3772	3667	

OBJECTS IN ORBIT				CATALOGUE				PERIGEE				TRANSMITTING	
OBJECT	CODE NAME	LAUNCH	SOURCE	NODAL PERIOD	INCLI - NATION	APOGEE Km.	PERIGEE Km.	FREQ. (MC/S)					
1963 LAUNCHES (CONT'D)													
1963 31A	SYNCOM 2	26 JUL	US	1438.1	32.54	35863	35788	\$136.980					
								\$136.468\$1814.069;					
								\$1815.794\$1820.177					
1963 31B	ROCKET BODY	26 JUL	US	CURRENT ELEMENTS NOT MAINTAINED									
1963 38A		28 SEP	US	107.1	89.90	1117	1070						
1963 38B		28 SEP	US	107.4	89.90	1137	1075						
1963 38C		28 SEP	US	107.3	89.91	1134	1076	136.653					
1963 38D		28 SEP	US	107.3	89.92	1145	1064						
1963 38E		28 SEP	US	107.1	89.93	1121	1065						
1963 39A		17 OCT	US	6482.8	38.20	116340	101242						
1963 39B		17 OCT	US	2319.4	35.90	102372	953						
1963 39C		17 OCT	US	6495.2	37.91	115739	102137						
1963 42B		29 OCT	US	92.3	89.93	483	289						
1963 43A	POLYOT	1 NOV	USSR	102.4	58.93	1406	335						
1963 43B		1 NOV	USSR	101.0	58.60	1283	326						
1963 43C		1 NOV	USSR	98.8	58.94	1105	296						
1963 43D		1 NOV	USSR	100.9	59.83	1273	332						
1963 46A	EXPLORER 18	27 NOV	US	5599.5	35.29	192077	2073						
1963 47A	CENTAUR 2	27 NOV	US	107.8	30.36	1784	464						
1963 47B		27 NOV	US	107.3	30.06	1618	578						
1963 47C		27 NOV	US	107.5	30.06	1637	581						
1963 47D		27 NOV	US	108.0	29.91	1655	613						
1963 47E		27 NOV	US	108.6	30.41	1750	575						
1963 47F		27 NOV	US	108.7	30.45	1745	581						
1963 47G		27 NOV	US	107.8	30.00	1641	609						
1963 47H		27 NOV	US	107.7	30.40	1665	570						
1963 49A		5 DEC	US	106.8	89.96	1088	1072						
1963 49B		5 DEC	US	107.1	89.95	1121	1069	150;400					

<u>OBJECTS IN ORBIT</u>				<u>PERIGEE</u>				<u>TRANSMITTING</u>			
<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE</u> <u>NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL</u> <u>PERIOD</u>	<u>INCLI -</u> <u>NATION</u>	<u>APOGEE</u> <u>Km.</u>	<u>PERIGEE</u> <u>Km.</u>	<u>FREQ.</u>	<u>(MC/S)</u>	
1963 LAUNCHES (CONT'D)											
1963 49C		705	US	5 DEC	107.1	89.97	1115	1073	54;162;324;648		
1963 49D		706	US	5 DEC	107.1	89.97	1098	1085			
1963 49E		715	US	5 DEC	107.1	89.92	1120	1068			
1963 49F		753	US	5 DEC	107.1	89.97	1144	1045			
1963 53A	EXPLORER 19	714	US	19 DEC	115.6	78.62	2362	602			
1963 53B		721	US	19 DEC	115.8	78.61	2387	596			
1963 53C		722	US	19 DEC	115.8	78.58	2389	597			
1963 53D		723	US	19 DEC	115.9	78.59	2398	598			
1963 53E		724	US	19 DEC	115.9	78.62	2393	605			
1963 53F		725	US	19 DEC	115.9	78.59	2399	592			
1963 53G		726	US	19 DEC	115.8	78.58	2393	594			
1963 53H		732	US	19 DEC	115.8	78.60	2389	598			
1963 54A	TIROS 8	716	US	21 DEC	99.4	58.51	754	702	136.233 136.924		
1963 54B		717	US	21 DEC	99.3	58.51	749	702			
1963 54C		720	US	21 DEC	101.1	58.47	925	694			
1963 54D		736	US	21 DEC	97.7	58.50	707	590			
1963 55B		719	US	21 DEC	90.6	64.53	323	278			
1964 LAUNCHES											
1964 1A		727	US	11 JAN	103.4	69.94	933	912			
1964 1B	GCSE	728	US	11 JAN	103.4	69.92	934	912			
1964 1C	EGRS	729	US	11 JAN	103.4	69.91	934	910	136.805		
1964 1D	SOLAR RADIATION	730	US	11 JAN	103.5	69.92	934	912	136.887		
1964 1E		731	US	11 JAN	103.5	69.92	933	913			
1964 2A		733	US	19 JAN	101.3	99.06	849	792			
1964 2B		734	US	19 JAN	101.3	99.05	838	802			
1964 2C		735	US	19 JAN	101.3	99.07	841	803			
1964 3A	RELAY 2	737	US	21 JAN	194.7	46.33	7414	2085	136.141\$136.620		

OBJECTS IN ORBIT										
OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)	
1964 LAUNCHES (CONT'D)										
1964 03B		738	US	21 JAN	194.8	46.52	7377	2128		
1964 04A	ECHO 2	740	US	25 JAN	108.7	81.53	1253	1081		136.020;136.170
1964 04B		741	US	25 JAN	108.9	81.51	1310	1045		
1964 04C		742	US	25 JAN	108.8	81.48	1309	1040		
1964 04D		743	US	25 JAN	108.8	81.54	1313	1035		
1964 04E		749	US	25 JAN	99.1	81.59	1136	296		
1964 05A	SATURN 5	744	US	29 JAN	94.1	31.45	682	258		
1964 06A	ELEKTRON 1	746	USSR	30 JAN	169.3	60.87	7122	398		
1964 06B	ELEKTRON 2	748	USSR	30 JAN	1356.4	59.73	67779	645		
1964 06C		750	USSR	30 JAN	168.2	60.82	7035	394		
1964 06D		751	USSR	30 JAN	1384.1	59.95	68879	649		
1964 10A	COSMOS 25	757	USSR	27 FEB	91.0	49.03	395	252		
1964 11A		759	US	28 FEB	94.6	82.07	515	489		
1964 11B		760	US	28 FEB	94.2	82.06	492	474		
1964 11C		761	US	28 FEB	94.3	82.08	495	480		
1964 13A	COSMOS 26	766	USSR	18 MAR	89.8	48.96	273	237		
1964 15A	ARIEL 2	771	US/UK	27 MAR	101.0	51.71	1318	292		136.557
1964 15B		775	US/UK	27 MAR	100.8	51.70	1297	292		
1964 15C		847	US/UK	27 MAR	104.1	51.39	1535	371		
1964 16D		785	USSR	2 APR	HELIOCENTRIC ORBIT					
1964 19B	POLYOT 2	784	USSR	12 APR	92.2	58.97	455	311		
1964 26A		801	US	4 JUN	103.1	90.49	948	863		
1964 26B		805	US	4 JUN	103.9	90.19	984	903		
1964 26C		806	US	4 JUN	102.3	90.81	951	789		
1964 26D		809	US	4 JUN	103.1	90.50	949	862		
1964 28A	COSMOS 31	803	USSR	6 JUN	90.7	48.96	396	215		
1964 30A		811	US	13 JUN	91.6	115.00	357	346		

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 31A		812	US	18 JUN	101.6	99.81	845	824	
1964 31B		813	US	18 JUN	101.6	99.82	841	829	
1964 31C		815	US	18 JUN	101.6	99.83	841	827	
1964 35A		824	US	2 JUL	94.9	82.08	531	497	
1964 36B		826	US	6 JUL	91.2	92.98	376	290	
1964 38A	ELECTRON 3	829	USSR	10 JUL	168.2	60.80	7027	402	
1964 38B	ELECTRON 4	830	USSR	10 JUL	1313.8	60.54	66251	464	
1964 38C		831	USSR	10 JUL	168.6	60.81	7061	403	
1964 38D		832	USSR	10 JUL	1341.3	60.79	6776	441	
1964 40A		836	US	17 JUL	6024.7	39.13	104603	101995	
1964 40B		837	US	17 JUL	6005.0	40.89	111749	94372	
1964 40C		838	US	17 JUL	2366.2	36.73	104665	217	136.770
1964 41B		843	US	28 JUL	BARYCENTRIC ORBIT				
1964 42A	COSMOS 36	844	USSR	30 JUL	91.9	49.00	473	256	
1964 42B		845	USSR	30 JUL	91.8	48.99	463	251	
1964 43A		846	US	5 AUG	89.7	79.97	298	152	
1964 44A	COSMOS 37	848	USSR	14 AUG	89.0	64.97	241	209	
1964 44B		849	USSR	14 AUG	89.1	65.00	230	210	
1964 45B		851	US	14 AUG	127.4	95.68	3752	270	
1964 46A	COSMOS 38	853	USSR	18 AUG	94.3	56.12	753	198	
1964 46B	COSMOS 39	854	USSR	18 AUG	94.6	56.12	776	204	
1964 46C	COSMOS 40	855	USSR	18 AUG	94.0	56.12	720	207	
1964 46D		856	USSR	18 AUG	95.1	56.10	838	204	
1964 46E		857	USSR	18 AUG	94.6	56.14	783	210	
1964 46F		859	USSR	18 AUG	93.7	56.14	694	201	
1964 46G		860	USSR	18 AUG	95.0	56.02	784	245	
1964 47A	SYNCOM 3	858	US	19 AUG	1407.7	0.066	36275	34186	\$136.470\$136.980
									\$7361.30\$1814.05
									\$7363.00\$1815.275
									\$7361.92\$1814.64
1964 47B		862	US	19 AUG	694.5	16.80	38084	1113	

OBJECT	CODE NAME	CATALOGUE NUMBER	<u>OBJECTS IN ORBIT</u>			NODAL PERIOD	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
			SOURCE	LAUNCH						
1964 48A		861	US	21 AUG		91.7	114.97	363	351	
1964 49A		863	USSR	22 AUG		91.0	64.77	428	199	
1964 49B		865	USSR	22 AUG		91.4	64.74	471	197	
1964 49C		868	USSR	22 AUG		91.4	64.70	548	187	
1964 49D	COSMOS 41	869	USSR	22 AUG		CURRENT	ELEMENTS	NOT	MAINTAINED	
1964 50A	COSMOS 42	864	USSR	22 AUG		98.1	48.96	1105	230	
1964 50B		866	USSR	22 AUG		98.0	48.97	1097	228	
1964 50C	COSMOS 43	867	USSR	22 AUG		98.0	48.96	1093	227	
1964 51A	EXPLORER 20	870	US	25 AUG		103.91	79.89	1020	870	\$136.680\$136.350
1964 51B		871	US	25 AUG		103.87	79.93	1009	877	
1964 51C		873	US	25 AUG		103.71	79.83	999	872	
1964 51D		874	US	25 AUG		103.79	79.83	1007	872	
1964 51E		875	US	25 AUG		103.84	79.78	1013	870	
1964 52A	NIMBUS 1	872	US	28 AUG		98.380	98.66	940	425	136.498\$136.950
1964 53A	COSMOS 44	876	USSR	29 AUG		99.513	65.02	860	612	\$1707.5
1964 53B		877	USSR	29 AUG		99.582	65.05	758	680	

PLEASE ADD THE FOLLOWING TO THE DECAY OBJECTS LIST:

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>DECAY</u>
1964 28B		804	USSR	6 JUN	16 AUG 64
1964 45A		850	US	14 AUG	23 AUG 64
1964 45C		852	US	14 AUG	16 AUG 64

- * APHELION PERIHELION IN ASTRONOMICAL UNITS, INCLINATION TO ECLIPTIC
- ** TWO HUNDRED AND FOUR METAL OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH
1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE
FOUND IN THE DECAYED OBJECTS LISTS.
- § TRANSMITTING ON COMMAND ONLY.
- & TRANSMITTING WHEN IN SUNLIGHT ONLY.
- # NO CATALOGUE NUMBER ASSIGNED